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PATENT SPECIFICATION



Application Date: March 6, 1923. No. 6441/23. 210,647

Complete Accepted: Feb. 7, 1924.

COMPLETE SPECIFICATION.

Improvements in and relating to Devices for Stopping Leaks in Pipes and the like.

I, ERNEST CHARLES BALDWIN, of "Everton," 105, Albert Road, South Norwood, S.E. 25, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to devices employed for stopping leaks or other openings in pipes and the like, of the kind consisting of two half cylindrical jaws hinged together at one of their longitudinal edges, and has for its object improvements whereby a self-contained device (without separate clamping means) that can readily be applied to a pipe, is provided.

The present improvements consist in providing each of the jaws with an outwardly projecting part or heel on opposite sides of the hinge-pin and means of forcing them together or apart. According to one construction the hinge-pin passes through the eye of a bolt situated at a point between the said projecting parts. This bolt passes through a wedge-like block whose curved or inclined sides engage the adjacent faces of the aforesaid heels and between which it is forced by a wing-nut or equivalent part screwed on to the aforesaid bolt when it is desired to clamp the improved leak-stopping device to a pipe or the like.

The inner surfaces of the jaws are provided with a rubber or other elastic impervious pad which is clamped over the crack or opening in the pipe it is desired to stop.

According to a modified construction one of the heels may have a screw-threaded hole formed in it to receive a bolt provided with a milled or other suitable head having a hemispherical or other suitable surface adapted to press against the other heel when it is unscrewed so as

to separate said heels and close the jaws when it is desired to stop a leaky pipe.

It will be understood that in some cases the heels of the jaws may cross so as to cause the jaws to be clamped to a leaky part when the said heels are urged together.

I am aware that it has heretofore been proposed to provide devices for clamping various objects to tubular parts, consisting of curved jaws pivoted to each other and urged together by a cam or a setscrew pivoted or screwed into a projection extending from one jaw adapted to act on a projection extending from the other but in none of these cases were the jaws provided with an impervious pad to stop a leak.

It has heretofore been proposed to provide devices of the kind referred to with flanges at the outer edges of their hinged jaws which were adapted to be clamped together by loose bolts passing through said flanges and nuts but this arrangement was open to the objection that the bolts and nuts, which had to be removed before the device could be applied to a leaky pipe, were liable to be lost, and when in use the head of the bolt as well as the face of the nut could only bear evenly upon the flanges when used on a pipe of a given diameter.

I will now proceed to more particularly describe my invention with the aid of the accompanying drawings in which:—

Fig. 1 is a perspective view of the improved device,

Fig. 2 is an end elevation of the same,

Figs. 3 and 4 are similar views to Fig. 2 illustrating modified constructions.

According to the construction shown in Figs. 1 and 2 of the drawings, two half cylindrical jaws *a*, *b* of metal or other suitable material are hinged

together along one of their edges upon a pin *c*. The jaws *a, b* are each provided with a projecting part or heel *d, e* on the opposite sides of the hinge-pin *c* that acts as a fulcrum when force is applied to the heels *d, e* so as to urge them apart and the jaws *a, b* towards each other for the purpose of stopping a leak.

In order to separate the heels *d, e* a wedge-shaped block *f* is forced between them by means of the nut *g* screwed on to the bolt *h* which passes through a hole in said block. The bolt *h* is provided with an eye at its inner end through which the hinge-pin *c* passes. The jaws *a, b* have an inner surface *i* of rubber or other elastic impervious material which is forced into intimate contact with the surface of the pipe when the nut *g* is screwed on to the bolt *h*. In order to normally urge the jaws *a, b* apart when the nut *g* is unscrewed, a flat spring *n* in the form of a tube having a longitudinal slit may be provided between them and the rubber surface *i*, or a wire spring wound on a convenient part of the hinge-pin may be provided for this purpose.

In use, the nut *g* is first unscrewed causing the jaws *a, b* to separate. The device is then placed in position around the pipe to be stopped with the hole or flaw beneath one of the jaws *a* or *b*. The nut *g* is then screwed up so as to force the jaws together and the rubber surface into contact with the walls of the pipe.

According to a modified construction shown in Fig. 3 one of the heels *d* or *e* may have a screw-threaded hole formed in it to receive a bolt *k* provided with a milled or other suitable head *l* having a hemispherical or other suitable surface adapted to press against the other heel when it is unscrewed so as to separate said heels and close the jaws when it is desired to stop a leaky pipe.

According to the arrangement shown in Fig. 4, one of the heels *e* has a bolt *k* hinged to it and the other heel *d* is provided with a hole through which the free end of said bolt extends. The bolt is provided with a nut *m* by unscrewing which the heels are urged apart and the jaws *a, b* closed around the leaky part.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An improved device for stopping

leaks in pipes and the like comprising two jaws having half-cylindrical inner surfaces hinged together characterised by each jaw having an outwardly projecting part or heel on the opposite side of its hinge-pin, an elastic impervious pad extending across the inner faces of said jaws and means of forcing said heels together or apart in order to close the jaws around a leak substantially as described in the specification.

2. An improved device for stopping leaks in pipes according to Claim 1 characterised by a wedge-shaped block situated between the projecting heels of the jaws, a bolt pivoted to the hinge-pin and extending through a hole in said block and a wing or other suitable nut screwed on to said bolt and adapted to force said block between the heels of the jaws substantially as described in the specification.

3. An improved device for stopping leaks in pipes according to Claims 1 and 2 characterised by one or more springs adapted to normally maintain the jaws in their open position substantially as described in the specification.

4. A modified form of the device for stopping leaks in pipes according to Claims 1 and 3 characterised by means of clamping the jaws together consisting in providing one of the heels with a screw-threaded hole to be engaged by a bolt whose end engages the other heel, said bolt having means of rotating it substantially as described in the specification.

5. A modified form of the device for stopping leaks in pipes according to Claims 1 and 3 characterised by means of clamping the jaws together consisting in providing one of the heels with a pivoted bolt and the other with a hole for such bolt to extend through and a nut on said bolt to urge said heels together or apart substantially as described in the specification.

6. The combination and arrangement of parts constituting an improved device for stopping leaks in pipes and the like, substantially as described in the specification and shown in the drawings.

Dated this 6th day of March, 1923.

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Fig.1.

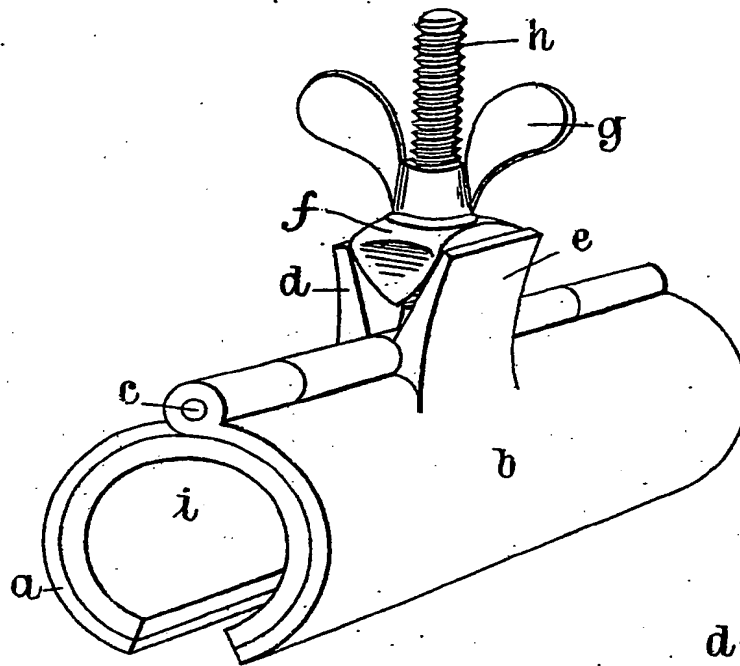


Fig.2.

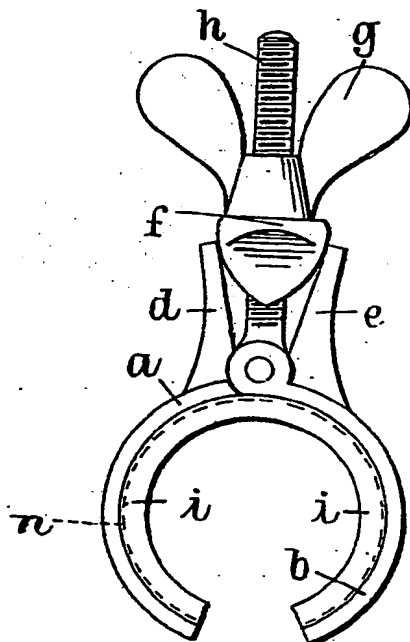


Fig.3.

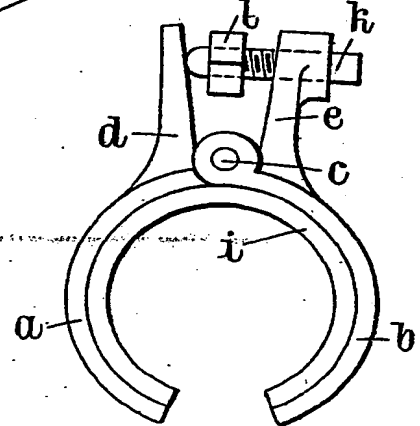
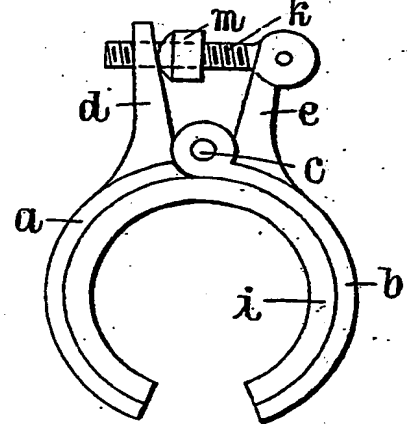


Fig.4.



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